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United States
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Soil
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Washington Basin Outlook Report February 1, 1993

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Basin Outlook Reports

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How forecasts are made

Most of the annual streamflow in the Western United States originates as snowfall that has accumulated high in the mountains during winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Predictions are based on careful measurements of snow water equivalent at selected index points. Precipitation, temperature, soil moisture and antecedent streamflow data are combined with snowpack data to prepare runoff forecasts. Streamflow forecasts are coordinated by Soil Conservation Service and National Weather Service hydrologists. This report presents a comprehensive picture of water supply conditions for areas dependent upon surface runoff. It includes selected streamflow forecasts, summarized snowpack and precipitation data, reservoir storage data, and narratives describing current conditions.

Snowpack data are obtained by using a combination of manual and automated SNOTEL measurement methods. Manual readings of snow depth and water equivalent are taken at locations called snow courses on a monthly or semi-monthly schedule during the winter. In addition, snow water equivalent, precipitation and temperature are monitored on a daily basis and transmitted via meteor burst telemetry to central data collection facilities. Both monthly and daily data are used to project snowmelt runoff.

Forecast uncertainty originates from two sources: (1) uncertainty of future hydrologic and climatic conditions, and (2) error in the forecasting procedure. To express the uncertainty in the most probable forecast, four additional forecasts are provided. The actual streamflow can be expected to exceed the most probable forecast 50% of the time. Similarly, the actual streamflow volume can be expected to exceed the 90% forecast volume 90% of the time. The same is true for the 70%, 30%, and 10% forecasts. Generally, the 90% and 70% forecasts reflect drier than normal hydrologic and climatic conditions; the 30% and 10% forecasts reflect wetter than normal conditions. As the forecast season progresses, a greater portion of the future hydrologic and climatic uncertainty will become known and the additional forecasts will move closer to the most probable forecast.

Washington Water Supply Outlook

February 1993

General Outlook

FEBRUARY 1, 1993: The snowpack varies from 70% in the Olympic Basin to 130% in the Walla Walla Basin. Washington SNOTEL sites averaged 105% of normal snowpack on February 1 (By February 5, the statewide average was 102%). January precipitation was 65% of normal state wide, and varied from 95% of average in the Walla Walla Basin to 48% in the Spokane Basin. Year-to-date precipitation varies from 95% in the Walla Walla to 73% in the North Puget Basin. January temperatures were below normal and varied from two degrees below in the White-Green Basin to eight degrees below in the Walla Walla Basin. With the below normal temperatures in January, streamflows varied from 90% of normal on the Similkameen River to 21% on the Walla Walla River. February 1 reservoir storage is generally poor throughout the state, with reservoirs in the Yakima Basin at 36% of average and 22% of capacity. Forecasts for 1993 runoff vary from 103% of average for the Walla Walla River to 82% for the Skagit River.

Snowpack

The February 1 SNOTEL reading showed the snowpack to be 105% of average. Snowpack continues to vary over the state, with the north being below normal and increases closer to the Oregon border. The Walla Walla River Basin had the highest with 130% of average, and the Cowlitz-Lewis Basin had 124% of normal. The North Puget River Basins had 88% of average. The Olympic Peninsula rivers were the lowest with 70% of average. Snowpack along the east slopes of the Cascade Mountains includes the Yakima with 95%, down from 116% last month, and the Wenatchee 89%, down from 104%. Snowpack in the Okanogan is at 98%, down from 114%, and the Spokane Basin at 108%, down from 118%. Maximum snow cover is at Paradise on Mount Rainier, with a water content of 41.7 inches. This site would normally have 38.5 inches of water content on February 1.

Precipitation

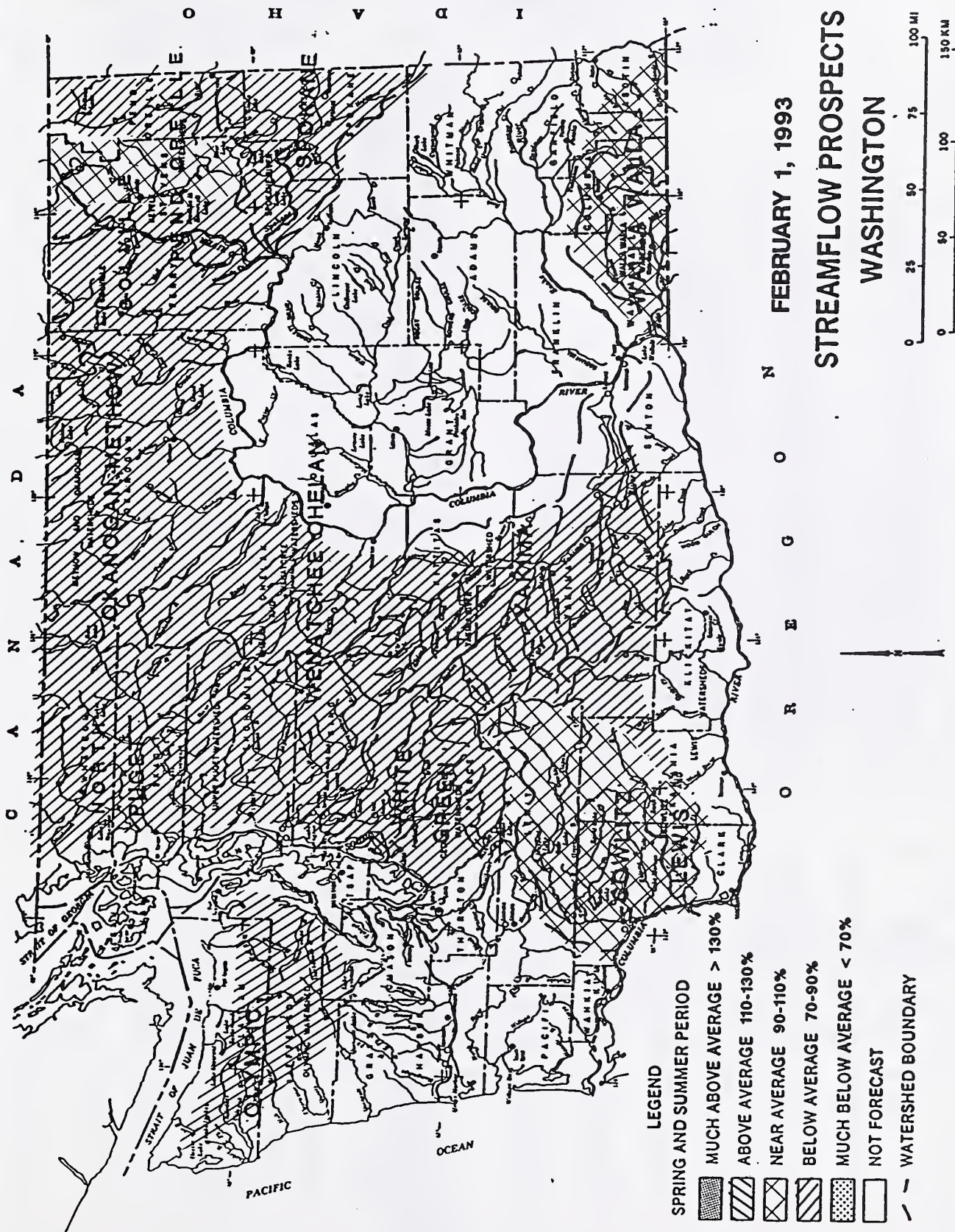
January precipitation reported from National Weather Service stations was 65% of average statewide. The year-to-date precipitation statewide is 82% and varied from 95% of normal in the Walla Walla Basin, to 73% in the North Puget Basin. January precipitation varied from 48% of average in the Spokane Basin, to 97% in the Walla Walla Basin. SNOTEL sites in Washington showed high elevation year-to-date precipitation values to be 84%. Maximum year-to-date precipitation was at the June Lake SNOTEL site near Mt. St. Helens, with 68.1 inches since October 1, 1992; normal for this site is 81.6 inches.

Reservoir

Reservoir storage in Washington is much below average for February 1. Cold weather has reduced the streamflow entering the reservoirs. Reservoir storage in the Yakima Basin was 232,800 acre feet, 36% of normal. Storage at other reservoirs include Roosevelt at 94% of average, and the Okanogan reservoirs at 92% of normal for February 1. The power generation reservoirs contain the following: Coeur d'Alene Lake, 48,000 acre feet, or 38% of normal; Chelan Lake, 234,600 acre feet, 52% of average and 35% of capacity, and Ross Lake at 72% of average, and 53% of capacity.

Streamflow

January streamflows were below average in Washington. The Similkameen River at 90% was the highest and the South Fork Walla Walla River with 21%, was the lowest in the state. Other streamflows were the following percentage of normal: the Cowlitz River, 41%; the Okanogan River, 78%; the Spokane River, 45%; the Columbia at the Canadian border, 68%, and the Yakima River at Kiona, 46%. Forecasts for summer streamflow are for below-to-near average and vary from 103% of average for the Walla Walla River to 80% of normal for the Okanogan River. February forecasts for some west side streams include: Cedar River, 87%; Green River, 88%; and the Dungeness River, 86%. Some east side streams include the Yakima River at Parker, 81%; the Wenatchee River, 85%; and the Colville River, 95%.

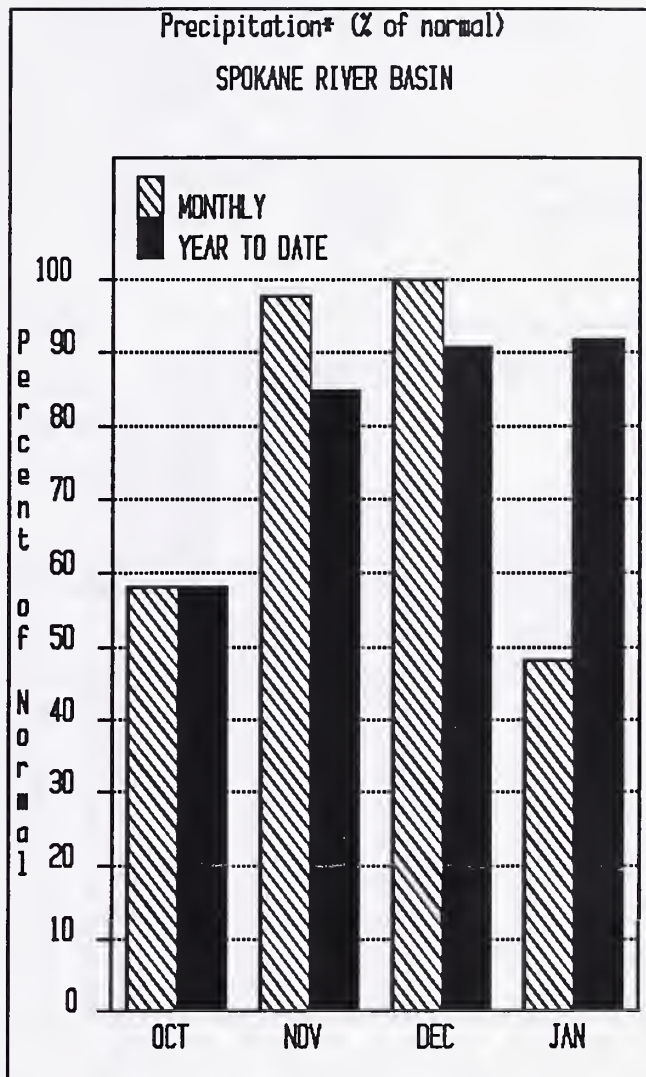
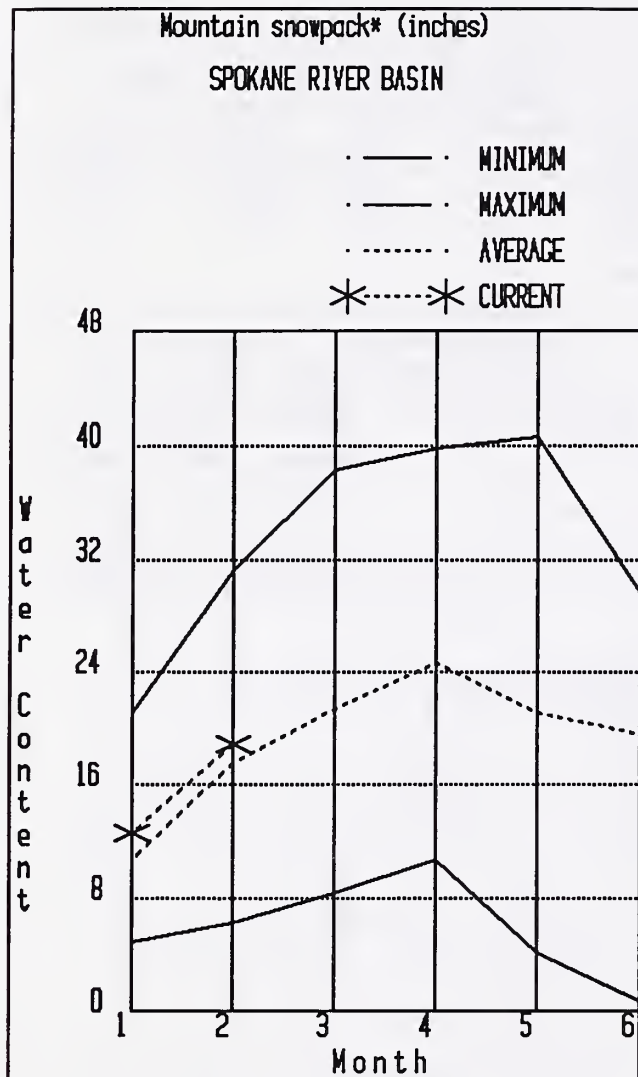


SOURCE: Data compiled by SCS
Field Personnel

BASIN SUMMARY OF SNOW COURSE DATA FEBRUARY 1993

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1961-90	
PEND OREILLE RIVER							YAKIMA RIVER							
BENTON MEADOW	2370	1/28/93	27	7.7	1.9	4.8	AHTANUM R.S.	3100	2/01/93	30	9.1	3.0	5.8	
BENTON SPRING	4920	1/28/93	39	12.2	14.5	12.9	BLEWETT PASS #2	4270	1/30/93	33	10.9	8.2	11.6	
BUNCHGRASS MDWPILLLOW	5000	2/01/93	---	15.2	17.8	18.8	BLEWETT PASS#2PILLLOW	4270	1/30/93	37	12.0	8.2	13.6	
HOODOO BASIN	6050	1/28/93	82	26.1	29.4	33.4	BUMPING LAKE	3450	1/28/93	33	10.4	5.6	11.6	
HOODOO CREEK	5900	2/01/93	---	22.4E	25.4	30.3	BUMPING LAKE (NEW)	3400	1/28/93	41	12.8	7.7	14.2	
NELSON CAN.	3100	1/28/93	41	11.4	11.3	11.3	BUMPING RIDGE PILLLOW	4600	2/01/93	---	16.6	13.9	13.9	
KETTLE RIVER							COLOCKUM PASS	5370	1/30/93	40	11.8	7.3	11.5	
BARNES CREEK CAN.	5300	2/02/93	56	17.1	16.5	13.6	CORRAL PASS PILLLOW	6000	2/01/93	---	21.1	23.6	21.3	
BIG WHITE MTN CAN.	5510	1/31/93	50	14.3	12.3	12.8	FISH LAKE	3370	1/26/93	64	19.9	21.0	21.1	
FARRON CAN.	4000	1/29/93	36	8.8	8.1	9.8	FISH LAKE PILLLOW	3370	2/01/93	---	18.8	18.4	22.0	
GOAT CREEK	3600	1/27/93	25	5.8	4.4	5.2	GREEN LAKE	6000	2/01/93	62	22.8	15.5	22.6	
MONASHEE PASS CAN.	4500	2/02/93	41	11.3	10.4	9.4	GREEN LAKE PILLLOW	6000	2/01/93	---	15.7	11.3	14.1	
SUMMIT G.S.	4600	1/27/93	30	7.4	7.2	5.6	GROUSE CAMP PILLLOW	5380	1/30/93	43	13.0	13.8	13.8	
COLVILLE RIVER							LAKE CLE ELUM	2200	1/29/93	19	5.9	.0	7.0	
OMAK LAKE, TWIN LAKES							MORSE LAKE PILLLOW	5400	2/01/93	---	30.2	38.9	29.6	
MISSION (OMAK)	1150	1/26/93	13	3.2	--	--	OLALLIE MDWS PILLLOW	3960	2/01/93	---	29.6	20.4	34.3	
MOUNT TOLMAN	2000	1/28/93	22	6.2	2.3	3.1	OLALLIE MEADOWS	3630	2/01/93	40	17.7	16.2	29.3	
TWIN LAKES	2700	1/28/93	26	7.0	4.6	6.7	SASSE RIDGE PILLLOW	4200	2/01/93	---	22.5	21.8	21.6	
SPOKANE RIVER							STAMPEDE PASS PILLLOW	3860	2/01/93	---	28.4	25.9	28.8	
FOURTH OF JULY SUM	3200	1/28/93	33	9.4	2.6	7.2	TUNNEL AVENUE	2450	1/27/93	43	13.6	5.8	15.4	
LOST LAKE (d)	6110	2/01/93	---	31.5E	35.6	37.4	WHITE PASS ES PILLLOW	4500	2/01/93	---	19.0	11.8	15.5	
MOSQUITO RDG PILLLOW	5200	2/01/93	---	18.4	25.8	25.2	AHTANUM CREEK							
SUNSET PILLLOW	5540	2/01/93	---	19.2	23.6	24.8	AHTANUM R.S.	3100	2/01/93	30	9.1	3.0	5.8	
NEWMAN LAKE							GREEN LAKE	6000	2/01/93	62	22.8	15.5	22.6	
QUARTZ PEAK PILLLOW	4700	2/01/93	---	16.7	10.6	14.0	GREEN LAKE PILLLOW	6000	2/01/93	---	15.7	11.3	14.1	
RAGGED RIDGE	3330	1/24/93	36	13.7	2.7	6.2	MILL CREEK							
OKANOGAN RIVER							HIGH RIDGE PILLLOW	4980	2/01/93	---	23.6	15.6	16.0	
ABERDEEN LAKE CAN.	4300	1/29/93	28	6.7	3.3	5.0	TOUCHET #2 PILLLOW	5530	2/01/93	---	24.4	19.9	20.8	
BLACKWALL PEAK CAN.	6370	1/28/93	64	17.4	21.6	23.8	LEWIS - COWLITZ RIVERS							
ENDERBY CAN.	6200	1/28/93	79	18.5	21.6	24.8	JUNE LAKE PILLLOW	3200	2/01/93	---	39.6	4.2	28.1	
GREYBACK RES CAN.	5120	1/27/93	32	8.0	4.9	6.1	LONE PINE PILLLOW	3800	2/01/93	---	25.0	13.5	20.8	
HAMILTON HILL CAN.	4890	1/30/93	37	9.9	9.7	10.8	PARADISE PARK PILLLOW	5500	2/01/93	---	41.7	47.5	38.5	
HARTS PASS PILLLOW	6500	2/01/93	---	23.0	34.1	27.7	PIGTAIL PEAK PILLLOW	5900	2/01/93	---	25.8	33.3	30.4	
ISINTOK LAKE CAN.	5500	1/28/93	29	5.6	4.3	5.6	POTATO HILL PILLLOW	4500	2/01/93	---	20.4	14.5	16.4	
LOST HORSE MTN CAN.	6300	2/01/93	28	6.3	5.1	6.5	SHEEP CANYON PILLLOW	4050	2/01/93	---	34.1	13.5	25.2	
MCCULLOCH CAN.	4200	2/01/93	29	7.0	4.1	5.0	SPENCER MDW PILLLOW	3400	2/01/93	---	29.1	10.4	20.0	
MISSEZULA MTN CAN.	5090	1/31/93	25	5.8	--	6.9	SPIRIT LAKE PILLLOW	3100	2/01/93	---	18.2	.0	6.4	
MISSION CREEK CAN.	5800	1/29/93	52	14.0	12.7	13.3	SURPRISE LKS PILLLOW	4250	2/01/93	---	35.0	23.7	30.4	
MONASHEE PASS CAN.	4500	2/02/93	41	11.3	10.4	9.4	WHITE PASS ES PILLLOW	4500	2/01/93	---	19.0	11.8	15.5	
MT. KOBAY CAN.	5900	1/30/93	38	10.1	5.7	8.7	WHITE RIVER							
MUTTON CREEK #1	5700	1/27/93	39	8.3	6.8	9.2	CORRAL PASS	6000	1/30/93	69	23.9	2.4	21.7	
OYAMA LAKE CAN.	4400	1/28/93	30	6.7	3.6	5.0	CORRAL PASS PILLLOW	6000	2/01/93	---	21.1	23.6	21.3	
POSTILL LAKE CAN.	4500	1/29/93	34	7.8	5.1	5.8	MORSE LAKE PILLLOW	5400	2/01/93	---	30.2	38.9	29.6	
RUSTY CREEK	4000	1/27/93	24	5.5	3.5	5.0	GREEN RIVER							
SALMON MDWS PILLLOW	4500	2/01/93	---	6.9	6.4	5.9	COUGAR MTN. PILLLOW	3200	2/01/93	---	17.3	3.2	15.0	
SILVER STAR MTN CAN.	6000	1/30/93	72	22.9	16.0	19.2	GRASS MOUNTAIN #2	2900	1/30/93	22	8.3	.0	10.3	
SUMMERLAND RES CAN.	4200	1/27/93	33	7.0	5.7	7.0	LESTER CREEK	3100	1/30/93	54	16.4	7.0	14.8	
SUNDAY SUMMIT CAN.	4300	1/30/93	17	3.7	2.8	4.8	LYNN LAKE	4000	1/30/93	46	15.8	6.5	14.8	
TROUT CREEK CAN.	4690	2/01/93	26	6.0	4.1	5.6	SAWHILL RIDGE	4700	1/30/93	57	20.5	14.7	23.9	
WHITE ROCKS MTN CAN.	6000	1/29/93	54	15.5	13.9	15.7	STAMPEDE PASS PILLLOW	3860	2/01/93	---	28.4	25.9	28.8	
METHOW RIVER							TWIN CAMP	4100	1/30/93	60	21.3	14.3	16.9	
HARTS PASS PILLLOW	6500	2/01/93	---	23.0	34.1	27.7	CEDAR RIVER							
MUTTON CREEK #1	5700	1/27/93	39	8.3	6.8	9.2	SNOQUALMIE RIVER							
RUSTY CREEK	4000	1/27/93	24	5.5	3.5	5.0	KROMONA MINE	2400	2/01/93	57	25.6	1.7	18.1	
SALMON MDWS PILLLOW	4500	2/01/93	---	6.9	6.4	5.9	OLALLIE MDWS PILLLOW	3960	2/01/93	---	29.6	20.4	34.3	
CHELAN LAKE BASIN							OLALLIE MEADOWS	3630	2/01/93	40	17.7	16.2	29.3	
LYMAN LAKE PILLLOW	5900	2/01/93	---	28.0	48.2	39.0	OLNEY PASS	3250	2/01/93	46	21.9	.0	12.0	
MINERS RIDGE PILLLOW	6200	2/01/93	---	27.4	12.4	--	SKYKOMISH RIVER							
PARK CK RIDGE PILLLOW	4600	2/01/93	---	24.7	41.3	29.6	STAMPEDE PASS PILLLOW	3860	2/01/93	---	28.4	25.9	28.8	
RAINY PASS PILLLOW	4780	2/01/93	---	20.9	34.8	24.5	STEVENS PASS PILLLOW	4070	2/01/93	---	28.2	28.4	27.3	
ENTIAT RIVER							STEVENS PASS SAND SD	3700	1/28/93	62	20.0	20.5	23.9	
BRIEF	1600	1/25/93	29	6.0	2.0	6.0	SKAGIT RIVER							
POPE RIDGE PILLLOW	3540	2/01/93	---	10.9	14.4	13.9	HARTS PASS PILLLOW	6500	2/01/93	---	23.0	34.1	27.7	
WENATCHEE RIVER							KLESILKWA CAN.	3710	2/02/93	26	7.9	2.9	9.3	
BERNE-MILL CREEK (d)	3170	1/28/93	57	17.4	17.2	19.9	LYMAN LAKE PILLLOW	5900	2/01/93	---	28.0	48.2	39.0	
BLEWETT PASS #2	4270	1/30/93	33	10.9	8.2	11.6	RAINY PASS PILLLOW	4780	2/01/93	---	20.9	34.8	24.5	
BLEWETT PASS#2PILLLOW	4270	1/30/93	37	12.0	8.2	13.6	BAKER RIVER							
CHIWAUKUM G.S.	2500	1/28/93	26	7.5	4.3	8.7	DOCK BUTTE	AM	3800	2/01/93	98	39.9	21.6	41.1
FISH LAKE PILLLOW	3370	2/01/93	---	18.8	18.4	22.0	EASY PASS	AM	5200	2/01/93	76	28.6	41.4	45.6
LYMAN LAKE PILLLOW	5900	2/01/93	---	28.0	48.2	39.0	JASPER PASS	AM	5400	2/01/93	122	43.3	51.8	58.8
MERRITT	2140	1/28/93	34	9.8	4.6	12.4	MARTEN LAKE	AM	3600	2/01/93	104	40.8	25.2	48.2
MISSION RIDGE	5000	1/28/93	39	12.0	8.7	11.5	MT. BLUM	AM	5800	2/01/93	82	33.2	31.3	41.3
STEVENS PASS PILLLOW	4070	2/01/93	---	28.2	28.4	27.3	ROCKY CREEK	AM	2100	2/01/93	84	31.8	4.7	20.0
STEVENS PASS SAND SD	3700	1/28/93	62	20.0	20.5	23.9	SCHREIBERS MDW	AM	3400	2/01/93	74	29.2	18.0	35.1
TROUGH #2 PILLLOW	5310	2/01/93	---	8.0	5.4	6.4	SF THUNDER CK	AM	2200	2/01/93	24	9.2	--	6.2
UPPER WHEELER	4400	1/26/93	34	10.0	5.0	8.0	WATSON LAKES	AM	4500	2/01/93	83	33.0	21.0	38.7
UPPER WHEELER PILLLOW	4400	2/01/93	---	10.0	7.4	9.3	ELWA RIVER							
SQUILCHUCK CREEK							HURRICANE	4500	1/31/93	32	9.0	5.0	13.7	
STEMILT CREEK							MORSE CREEK							
STEMILT SLIDE	5000	1/27/93	36	11.0	8.0	10.3	COX VALLEY	4500	1/29/93	57	18.6	19.3	24.9	
UPPER WHEELER	4400	1/26/93	34	10.0	5.0	8.0	DUNGENESS RIVER							
UPPER WHEELER PILLLOW	4400	2/01/93	---	10.0	7.4	9.3	DEER PARK	5200	1/28/93	31	9.1	9.1	13.5	
COLOCKUM CREEK							QUILCENE RIVER							
TROUGH #2 PILLLOW	5310	2/01/93	---	8.0	5.4	6.4	MOUNT CRAG PILLLOW	4050	2/01/93	---	18.4	11.3	--	
(d) Denotes discontinued site.							WYNOOCHEE RIVER							

Spokane River Basin



*Based on selected stations

Precipitation for January was 48% of average. The February 1 forecasts for summer runoff within the Spokane River Basin are 82%, down from 98% of normal. The forecast is based on a snowpack that is 108% of average and a water year-to-date precipitation value of 92% of normal. Temperatures in the basin were 4 degrees below normal during January. Streamflow on the Spokane River was 45% of average for January. February 1 storage in Coeur d'Alene Lake was 48,000 acre feet, 38% of normal, and 20% of capacity.

For more information contact your local Soil Conservation Service office.

SPOKANE RIVER BASIN

Streamflow Forecasts - February 1, 1993

		<<----- Drier ----- Future Conditions ----- Wetter ----->>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
SPOKANE nr Post Falls (1,2)	APR-SEP	345	1640	2230	81	2820	4120	2720
	APR-JUL	330	1580	2150	81	2720	3970	2627
SPOKANE at Long Lake (2)	APR-JUL			2400	81			2937

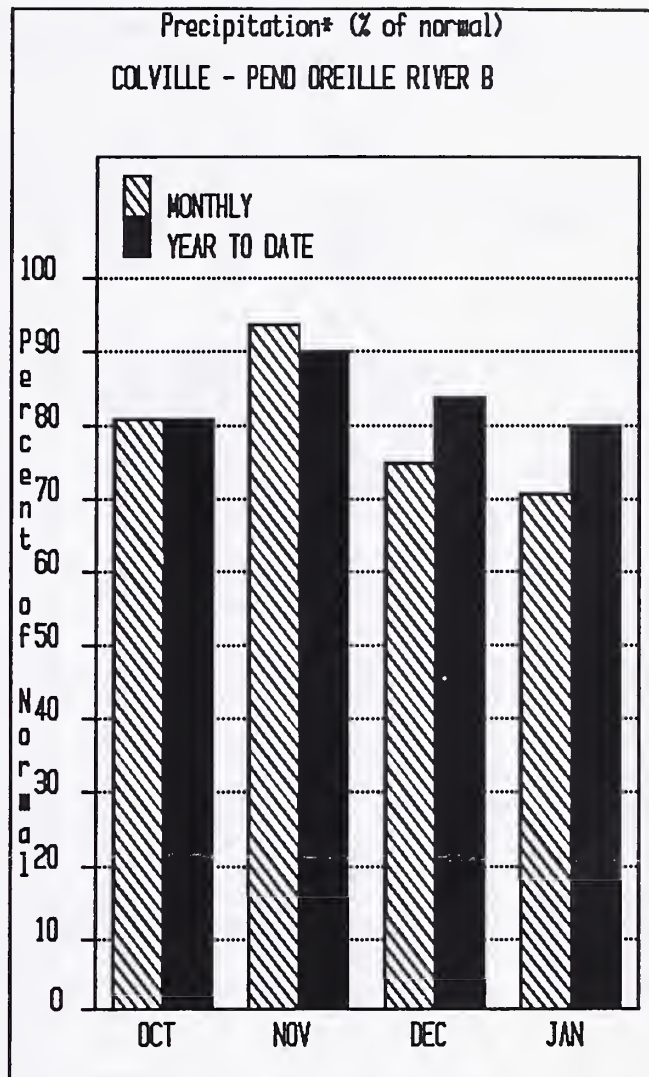
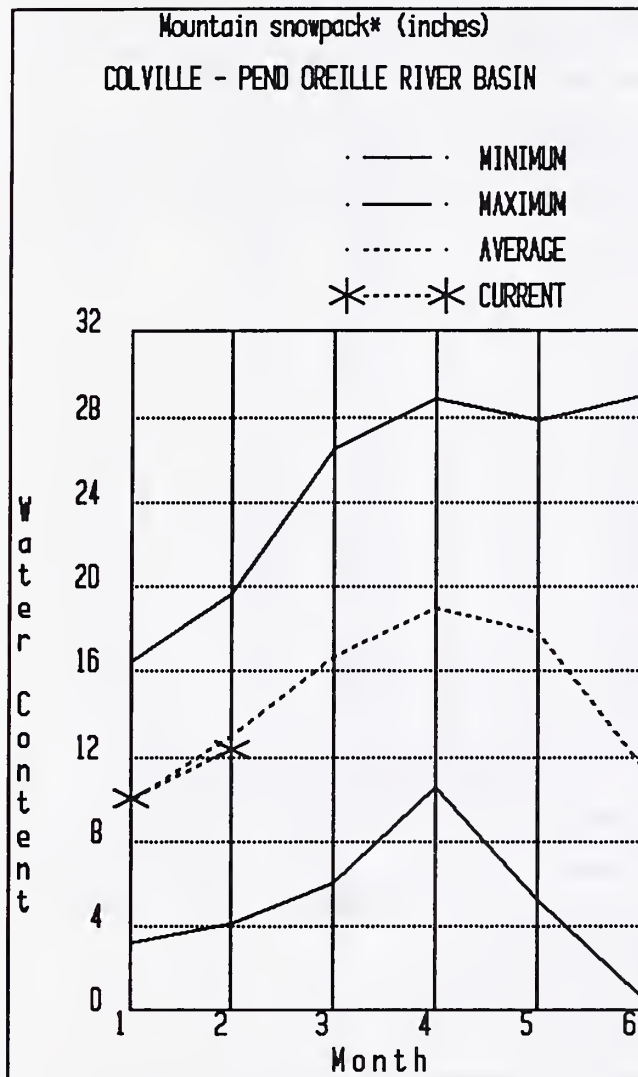
SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of January					SPOKANE RIVER BASIN Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of -----	
		This Year	Last Year	Avg			Last Yr	Average
					Spokane River	6	123	108

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Colville - Pend Oreille River Basins



*Based on selected stations

January streamflow was 57% of normal on the Pend Oreille River, 68% on the Columbia at the International Boundary, and 86% on the Kettle River. The forecast for the Kettle River streamflow is 93% of normal, the Pend Oreille, 80%, and the Colville River, 95% of normal for the summer runoff period. February 1 snow cover is 85% of normal, down from 98% of average on the Pend Oreille, and 115% on the Kettle River. Snowpack at Bunchgrass Meadow SNOTEL site was 15.2 inches of water, the average February 1 reading is 18.8. Precipitation during January was 71% of average, bringing the water year-to-date to 80% of normal. Temperatures were eight degrees below normal for January.

For more information contact your local Soil Conservation Service office.

COLVILLE - PEND OREILLE RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
PEND OREILLE bl Box Canyon (1,2)	APR-SEP	7910	10500	11700	80	12900	15500	14590
	APR-JUL	7220	9610	10700	79	11800	14200	13380
	APR-JUN	6270	8330	9260	80	10200	12300	11570
CHAMOKANE CK nr Long Lake	MAY-AUG	1.5	5.7	8.5	90	11.3	15.5	9.4
COLVILLE at Kettle Falls	APR-SEP	68	102	125	95	148	182	131
	APR-JUL	61	93	114	95	135	167	120
	APR-JUN	58	86	105	94	124	153	111
KETTLE nr Laurier	APR-SEP	1020	1420	1720	92	2020	2430	1853
	APR-JUL	940	1360	1640	93	1920	2340	1760
	APR-JUN	845	1220	1470	92	1720	2100	1585
COLUMBIA at Birchbank (1,2)	APR-SEP	29400	34500	36800	83	39100	44000	43810
	APR-JUL	23700	27700	29500	83	31300	35300	35140
	APR-JUN	17400	20300	21600	84	22900	25800	25670
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	42000	50600	54500	84	58400	67000	64780
	APR-JUL	35400	42600	45900	84	49200	56400	54500
	APR-JUN	27800	33400	35900	84	38400	44000	42730

COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of January

COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - February 1, 1993

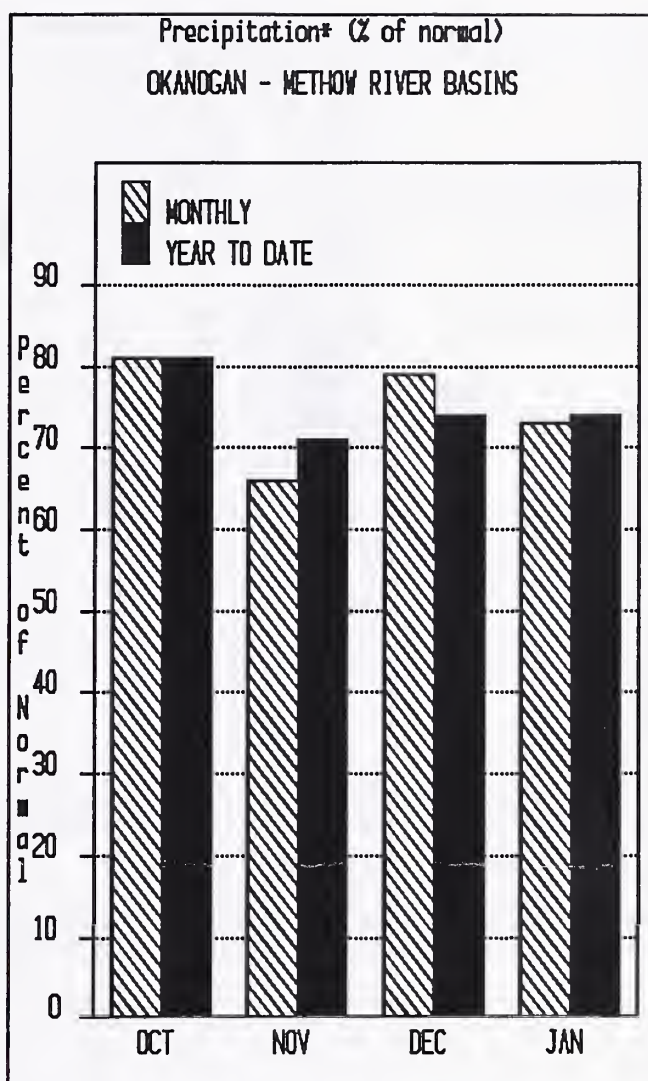
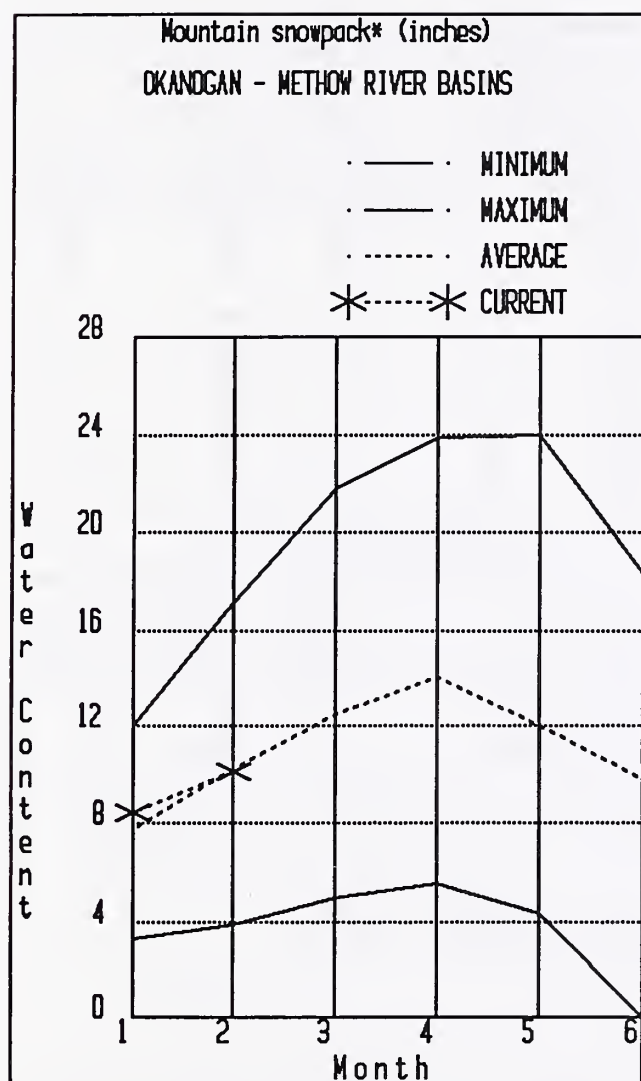
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROOSEVELT	5232.0	3511.7	5006.9	3749.0	Colville River	0	0	0
BANKS	715.0	688.2	680.2	599.0	Pend Oreille River	6	95	85
					Kettle River	6	110	115

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Okanogan - Methow River Basins



*Based on selected stations

Summer runoff forecast for the Okanogan River is 80% of normal; the Similkameen River, 82%, and the Methow River, 80% of normal. February 1 snow cover on the Okanogan was 98% of normal, down from 114% of average, 91% on the Methow, and 82% on the Similkameen River. January precipitation in the Okanogan-Methow was 73% of normal, with water year-to-date at 74% of average. January streamflow on the Methow River was 75% of normal, 78% on the Okanogan River, and 90% on the Similkameen. Snow water content at the Harts Pass SNOTEL, elevation 6500 feet, was 23.0 inches; normal for this site is 27.7 inches. Temperatures were eight degrees below normal for the month. Storage in the Conconully Reservoir is 12,700 acre feet, which is 54% of capacity and 92% of February 1 average.

For more information contact your local Soil Conservation Service office.

OKANOGAN - METHOW RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		-----		Chance Of Exceeding *		-----		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SIMILKAMEEN nr Nighthawk (1)	APR-SEP	845	1050	1150	82	1250	1460	1399
	APR-JUL	785	980	1070	82	1160	1360	1304
	APR-JUN	670	835	910	81	985	1150	1113
OKANOGAN RIVER nr Tonasket (1)	APR-SEP	635	1090	1300	80	1510	1970	1624
	APR-JUL	580	985	1170	79	1350	1760	1467
	APR-JUN	545	850	990	80	1130	1440	1234
METHOW RIVER nr Pateros (1)	APR-SEP	340	640	750	79	860	1160	942
	APR-JUL	375	600	705	80	810	1030	873
	APR-JUN	315	520	615	82	710	915	746

OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of January					OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of -----	
		This Year	Last Year	Avg			Last Yr	Average
CONCONULLY LAKE (SALMON)	10.5	7.3	8.2	7.5	Okanogan River	23	111	98
CONCONULLY RESERVOIR	13.0	5.4	7.4	6.3	Methow River	4	86	91

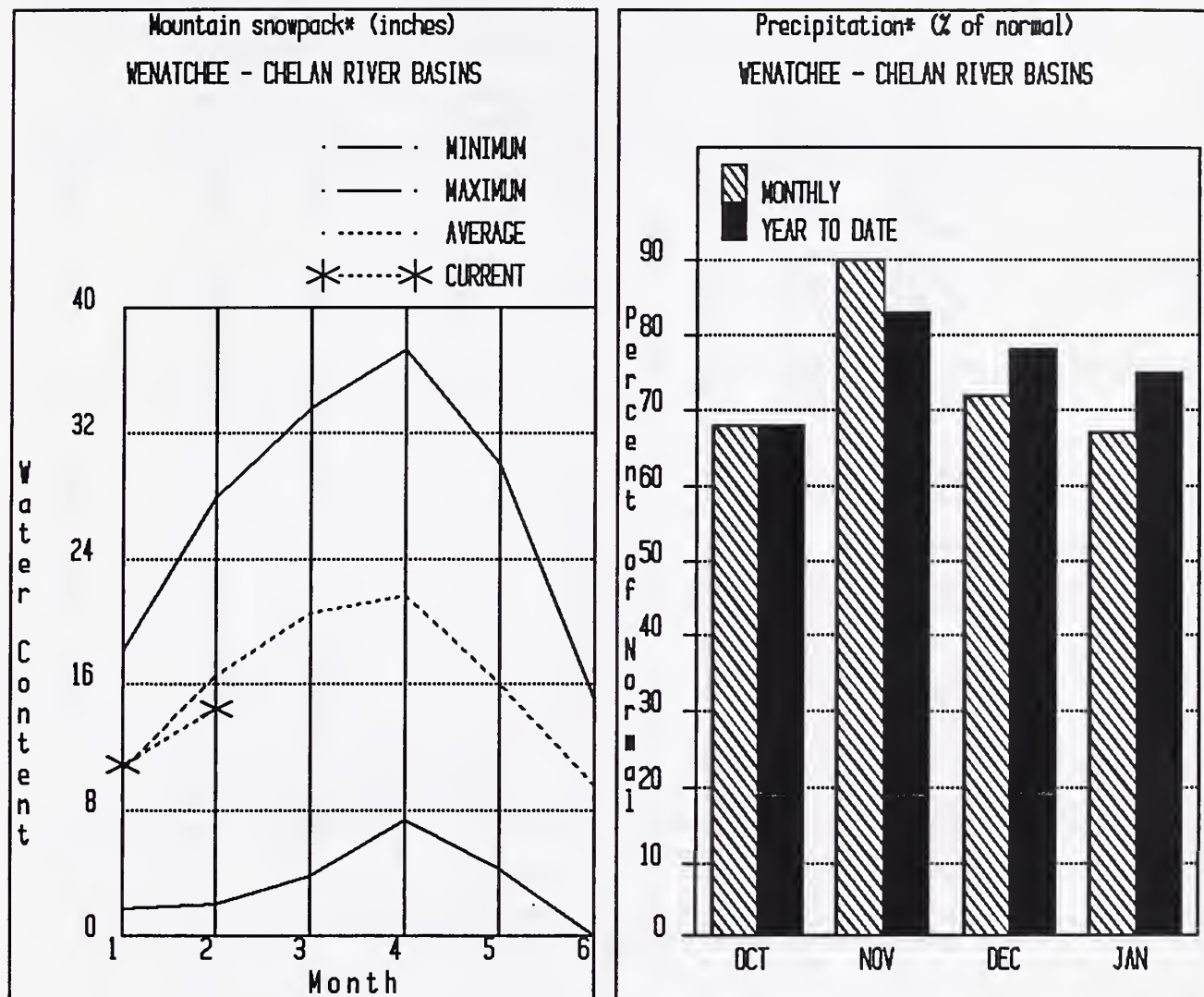
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

Wenatchee - Chelan River Basins



*Based on selected stations

Runoff for the Entiat River is forecast to be 88% of normal for the summer. The summer forecast for the Chelan River is for 83%, for the Wenatchee River it is 85%, and 88% on the Squilchuck-Stemilt. February 1 snowpack in the Wenatchee Basin is 89% of average down from 104% and the Chelan Basin is 79%. Snowpack along Colockum Ridge continues to be near normal for the first time in five years, with Stemilt Creek at 107%. Snowpack on the Entiat River is at 85% of average. Reservoir storage in Lake Chelan is 234,600 acre feet or 52% of February 1 average and 35% of capacity. Stevens Pass SNOTEL had the most snow water with 28.2 inches of water, this site would normally have 27.3 inches. Streamflow for January on the Chelan River was 51% of average and on the Wenatchee River it was 80% of normal. Precipitation during January was 67% of normal in the basin and 75% for the year to date.

For more information contact your local Soil Conservation Service office.

WENATCHEE - CHELAN RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		----- Chance Of Exceeding * -----				-----		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CHELAN RIVER at Chelan (1)	APR-SEP	675	845	965	83	1080	1260	1160
	APR-JUL	515	745	850	83	955	1180	1024
	APR-JUN	420	600	680	83	760	940	812
STEHEKIN R. at Stehekin	APR-SEP	545	640	710	85	780	880	827
	APR-JUL	460	545	600	85	655	740	701
	APR-JUN	365	425	470	87	515	575	538
ENTIAT RIVER nr Ardenvoir	APR-SEP	132	167	190	83	215	250	227
	APR-JUL	120	153	175	84	197	230	206
	APR-JUN	103	128	145	85	162	187	169
WENATCHEE R. at Peshastin	APR-SEP	785	1120	1350	82	1580	1920	1636
	APR-JUL	720	1020	1230	82	1440	1740	1485
	APR-JUN	590	835	1000	83	1170	1410	1204
STEMILT nr Wenatchee (miners in)	MAY-SEP	75	102	121	87	140	168	138
ICICLE CREEK nr Leavenworth	APR-SEP	250	280	330	89	380	455	370
	APR-JUL	185	255	300	88	345	415	340
	APR-JUN	149	205	240	88	275	330	270
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	46100	54200	59700	84	65200	73300	70410
	APR-JUL	39200	46000	50700	84	55400	62200	59690
	APR-JUN	30900	36300	39900	84	43500	48900	46980

WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of January					WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of -----	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	234.6	245.1	450.6	Chelan Lake Basin	3	59	79
					Entiat River	2	103	85
					Wenatchee River	11	100	89
					Squilchuck Creek	0	0	0
					Stemilt Creek	2	136	107
					Colockum Creek	1	148	125

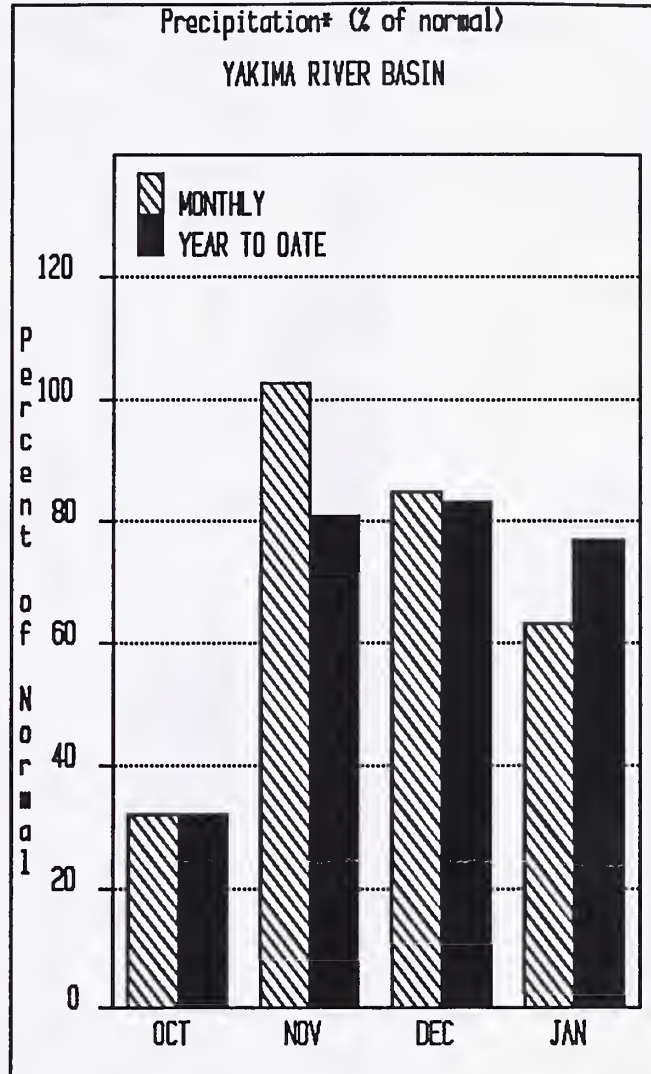
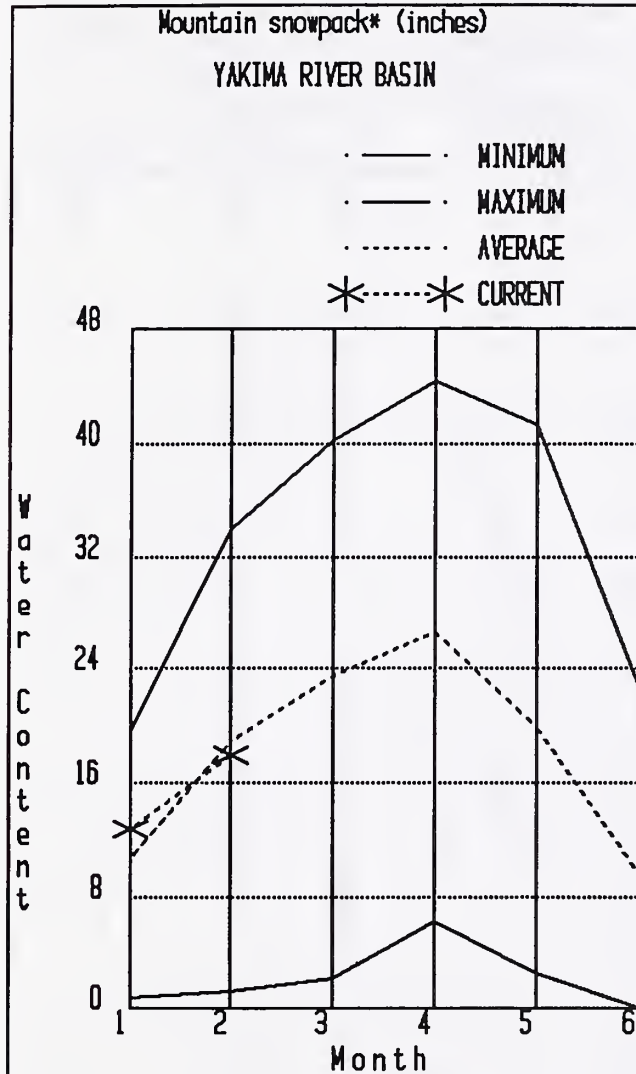
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

Yakima River Basin



*Based on selected stations

February 1 summer streamflow forecasts for the Yakima Basin vary throughout the basin as follows: The Yakima River at Cle Elum, 86%; Naches River, 85%; the Yakima River at Parker, 81%, Ahtanum Creek, 82%, and the Tieton River 84%. January streamflows were very low, with the Yakima River at Parker 40% of normal, 60% for the Yakima near Cle Elum, and 35% for the Naches River. February 1 snowpack is 95% based upon 18 snow courses and SNOTEL readings. January precipitation was 63% of normal and 77% for the water year to date. February 1 reservoir storage for the five major reservoirs at 232,800 acre feet, was 36% of average. Temperatures were six degrees below average for January. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U. S. Bureau of Reclamation's forecast for the total water supply available which includes irrigation return flow.

For more information contact your local Soil Conservation Service office.

YAKIMA RIVER BASIN

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
LAKE KEECHELUS INFLOW	APR-JUL	84	98	108	87	118	132	124
	APR-SEP	91	106	117	86	128	143	135
	APR-JUN	77	88	96	88	104	115	109
KACHESS LAKE INFLOW	APR-JUL	74	86	94	84	102	114	111
	APR-SEP	80	91	100	84	109	120	118
	APR-JUN	70	80	86	86	92	102	99
CLE ELUM LAKE INFLOW	APR-JUL	305	340	365	89	390	425	409
	APR-SEP	320	360	390	87	420	460	448
	APR-JUN	265	290	310	89	330	355	345
YAKIMA RIVER at Cle Elum	APR-JUN	515	580	620	85	660	725	721
	APR-JUL	590	665	715	85	765	840	832
	APR-SEP	650	730	785	85	840	920	915
BUMPING LAKE INFLOW	APR-SEP	79	105	115	84	126	154	136
	APR-JUL	82	96	105	84	114	128	124
	APR-JUN	66	79	88	84	97	110	104
AMERICAN RIVER nr Nile	APR-SEP	84	95	103	87	111	123	118
	APR-JUL	79	89	96	88	103	113	109
	APR-JUN	67	76	82	89	88	97	92
RIMROCK LAKE INFLOW	APR-SEP	137	184	200	84	215	265	237
	APR-JUL	142	159	170	85	181	198	200
	APR-JUN	117	131	140	86	149	163	162
NACHES RIVER nr Naches (2)	APR-SEP	475	660	710	85	760	950	832
	APR-JUL	540	605	650	86	695	760	755
	APR-JUN	465	520	560	86	600	655	651
AHTANUM CREEK nr Tampico (2)	APR-SEP	19.0	31	38	82	46	57	46
	APR-JUL	18.0	28	35	83	42	52	42
	APR-JUN	15.0	24	30	83	36	45	36
YAKIMA near Parker	APR-SEP	1200	1490	1620	81	1750	1990	1994
	APR-JUL	1190	1360	1480	81	1600	1770	1805
	APR-JUN	1080	1220	1320	82	1420	1560	1597

YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of January					YAKIMA RIVER BASIN Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	45.5	97.2	96.0	Yakima River	18	122	95
KACHESS	239.0	58.0	148.3	170.0	Ahtanum Creek	2	173	125
CLE ELUM	436.9	72.5	256.4	251.0				
BUMPING LAKE	33.7	4.7	11.0	9.0				
RIMROCK	198.0	52.1	77.7	115.0				

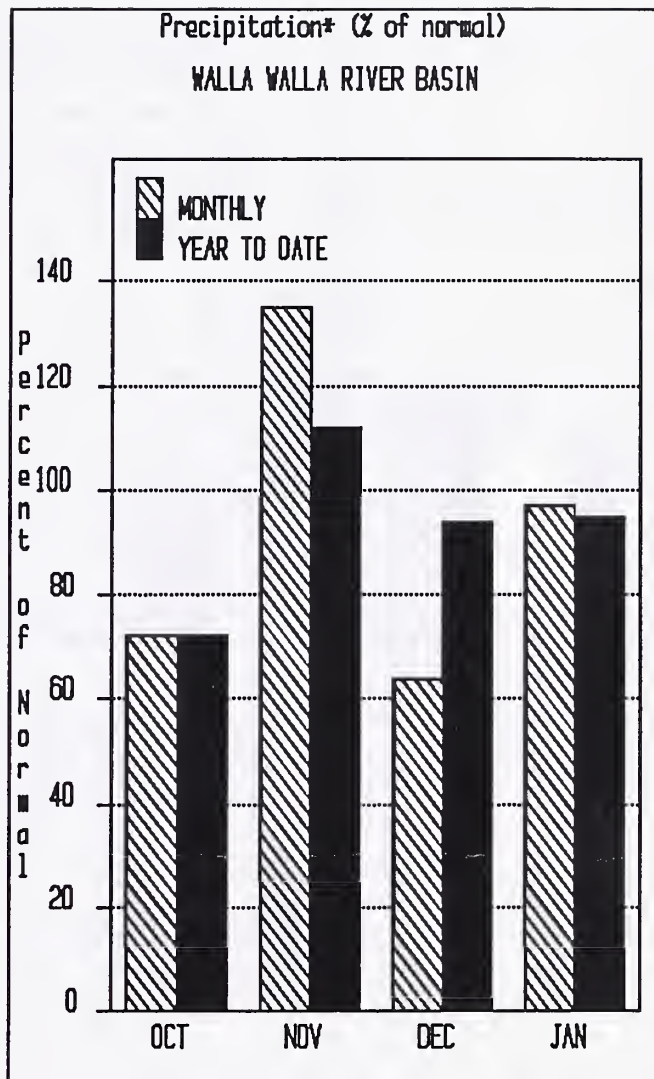
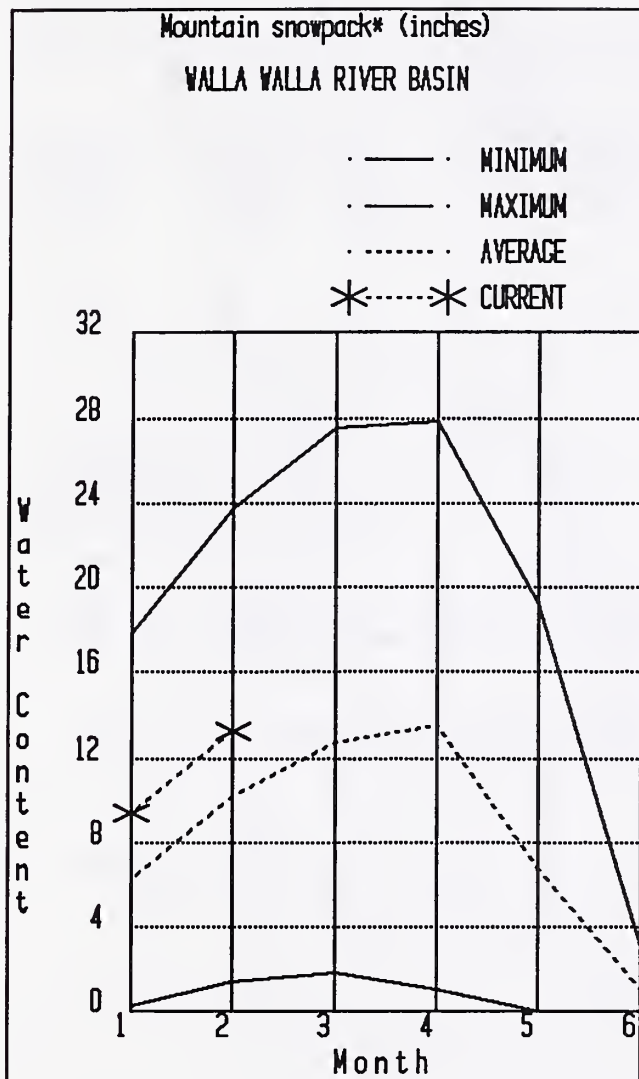
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

Walla Walla River Basin



*Based on selected stations

The forecast is for 103% of average streamflow in the Walla Walla River for the coming summer, the Grande Ronde, 103%; Snake River, 81%, and 93% for Mill Creek. January streamflow was 21% of normal on the Walla Walla River, 51% for the Snake River, and 39% on the Grande Ronde River near Troy. February 1 snowpack is at 130% of normal. The Touchet SNOTEL site has 24.4 inches of water, the normal February 1 reading for this site is 20.8 inches. January precipitation was 97% of average, bringing the year-to-date precipitation to 95% of normal. Temperatures were eight degrees below average for January.

For more information contact your local Soil Conservation Service office.

WALLA WALLA RIVER BASIN

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						30-Yr Avg. (1000AF)
		-----		Chance Of Exceeding *		-----		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SNAKE bl Lower Granite Dam (1,2)	APR-JUL	8290	14700	17600	81	20500	26900	21650
	APR-SEP	9330	16500	19800	81	23100	30300	24360
MILL CREEK at Walla Walla	APR-SEP	7.6	12.4	15.7	91	19.0	24	17.1
	APR-JUL	7.6	12.4	15.7	92	19.0	24	16.9
	APR-JUN	7.6	12.4	15.6	93	18.8	24	16.7

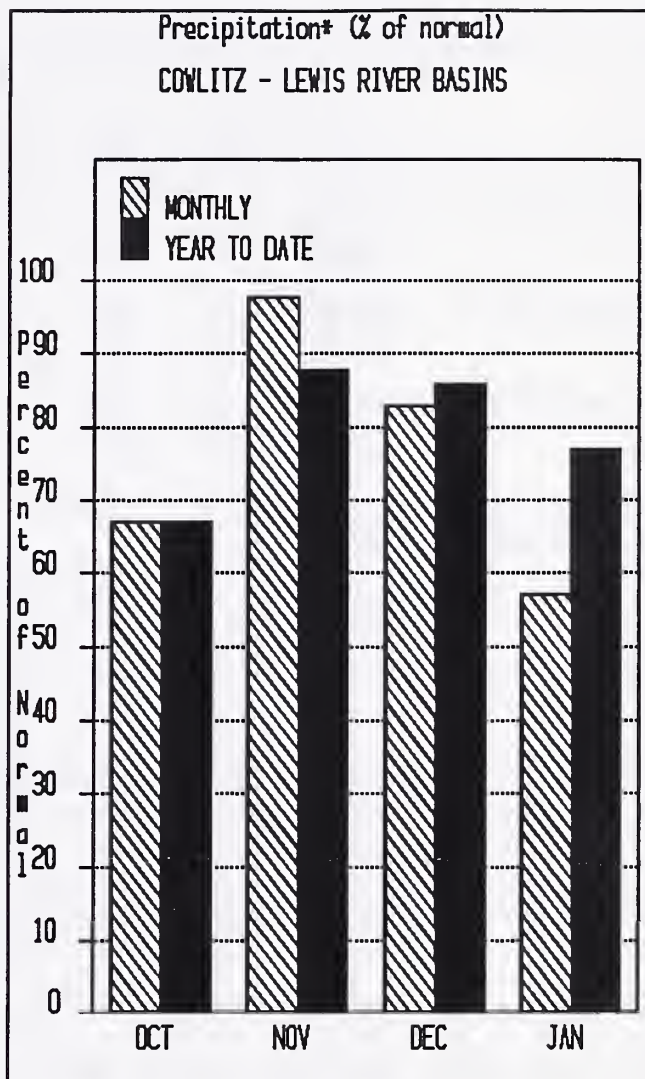
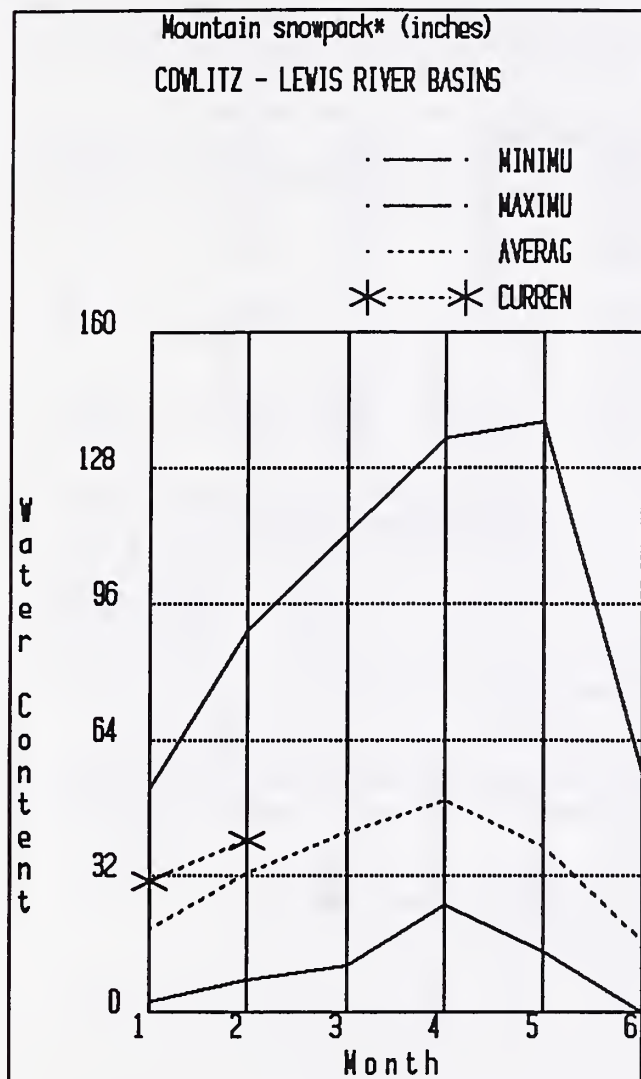
WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of January				WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr Average
		This Year	Last Year	Avg			
					Mill Creek	2	135 130

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

Cowlitz - Lewis River Basins



*Based on selected stations

The forecast for summer runoff in the Lewis River and the Cowlitz River, is 91% of normal. January streamflow on the Cowlitz River was 41% of average, and 51% on the Lewis River. January precipitation was 57% of normal, bringing the water year-to-date precipitation to 77% of average. February 1 snow cover for the Cowlitz River is 120%, and for the Lewis River it is 130%. The Paradise Park SNOTEL contained the maximum water content for the basin with 41.7 inches of water. Normal February 1 water content is 36.5 inches. Temperatures were three degrees below normal for January.

For more information contact your local Soil Conservation Service office.

COWLITZ - LEWIS RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						
		-----		Chance Of Exceeding *		-----		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
LEWIS RIVER at Ariel (2)	APR-SEP	385	915	1100	91	1290	1820	1204
	APR-JUL	555	795	955	90	1120	1350	1051
	APR-JUN	500	705	850	91	995	1200	933
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	710	1470	1800	91	2140	2900	1970
	APR-JUL	855	1290	1580	91	1870	2310	1731
	APR-JUN	730	1100	1350	91	1600	1970	1477
COWLITZ R. at Castle Rock (2)	APR-SEP	960	2140	2500	93	2860	4030	2667
	APR-JUL	1410	1870	2180	93	2490	2950	2325
	APR-JUN	1220	1610	1880	94	2150	2540	1995

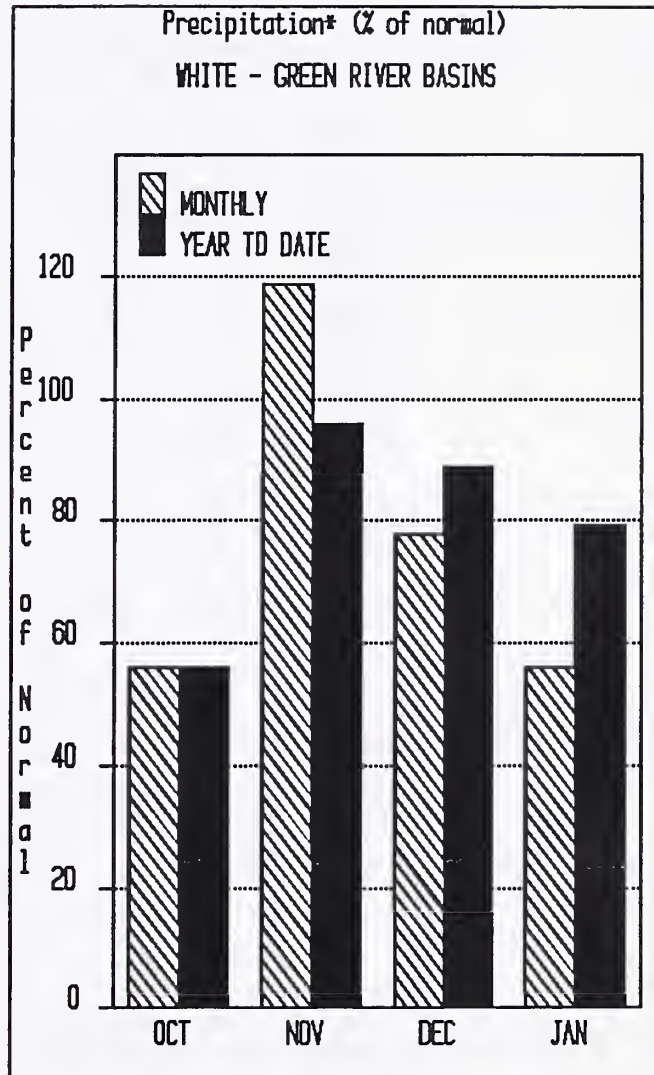
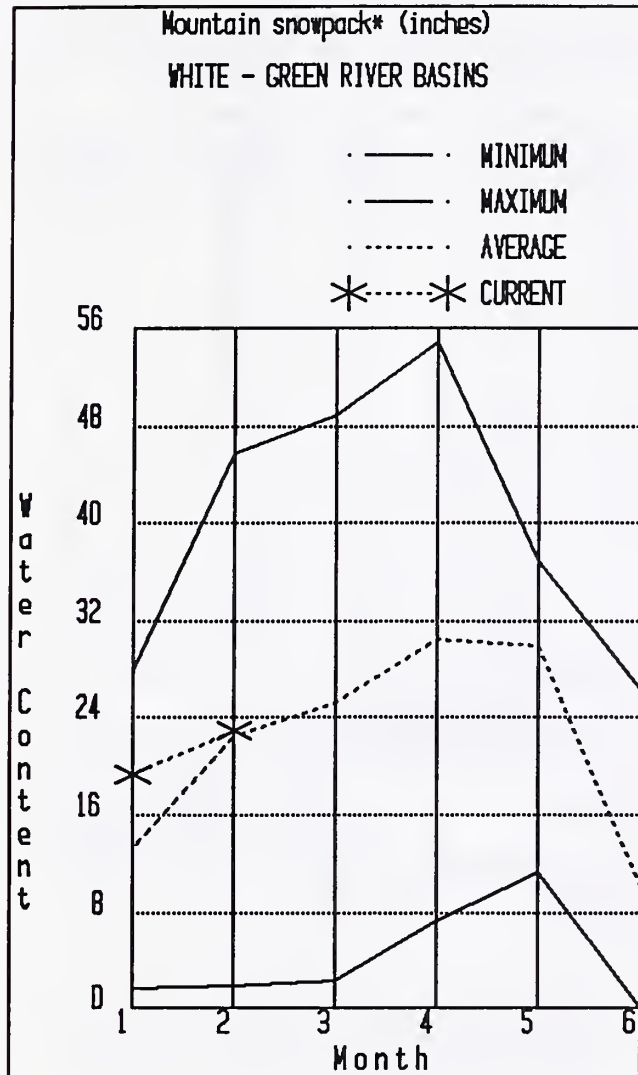
COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of January					COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites This Year as % of Last Yr Average		
		This Year	Last Year	Avg		6	132	120
					Cowlitz River	6	132	120
					Lewis River	4	248	130

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

White - Green River Basins



*Based on selected stations

Summer runoff is forecasted to be 88% on the Green River and 87% on the Cedar River. New forecast points include the Rex River at 87%, the South Fork of the Tolt River at 88% and the Cedar River at Cedar, 88%. February 1 snowpack was 101% of normal in the White River Basin and 103% in the Green River Basin. Water content on February 1 at the Stampede Pass SNOTEL, at an elevation of 3860 feet, was 28.4 inches. This site has a February 1 average of 28.8 inches. January precipitation was 56% of normal, bringing the water year to date to 79% of average. Temperatures were two degrees below average for January.

For more information contact your local Soil Conservation Service office.

WHITE - GREEN RIVER BASINS

Streamflow Forecasts - February 1, 1993

		<<----- Drier ----- Future Conditions ----- Wetter ----->>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF) (% AVG.)		30% (1000AF)	10% (1000AF)	
<hr/>								
GREEN RIVER below Howard Hanson Dam	APR-JUL	173	205	230	89	255	285	257
	APR-SEP	191	225	250	87	275	310	285
	APR-JUN	161	190	210	89	230	260	234
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CEDAR RIVER near Cedar Falls	APR-JUL	52	61	67	87	73	82	77
	APR-SEP	59	67	73	85	79	87	85
	APR-JUN	47	54	59	86	64	71	68
<hr/>								
REX RIVER nr Cedar Falls	APR-JUL	18.0	22	24	88	26	6.0	27
	APR-SEP	21	24	26	86	28	32	30
	APR-JUN	18.0	20	22	88	24	27	25
<hr/>								
CEDAR RIVER at Cedar Falls	APR-JUL	42	59	71	86	83	100	82
	APR-SEP	44	61	72	86	83	100	83
	APR-JUN	44	60	70	87	80	96	80
<hr/>								
SOUTH FORK TOLT RIVER near Index	APR-JUL	10.2	12.1	13.4	88	14.7	16.6	15.2
	APR-SEP	12.2	14.3	15.7	88	17.1	19.2	17.8
	APR-JUN	8.7	10.5	11.7	89	12.9	14.7	13.1

WHITE - GREEN RIVER BASINS Reservoir Storage (1000 AF) - End of January					WHITE - GREEN RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					White River	2	82	101
					Green River	7	179	103
					Cedar River	0	0	0

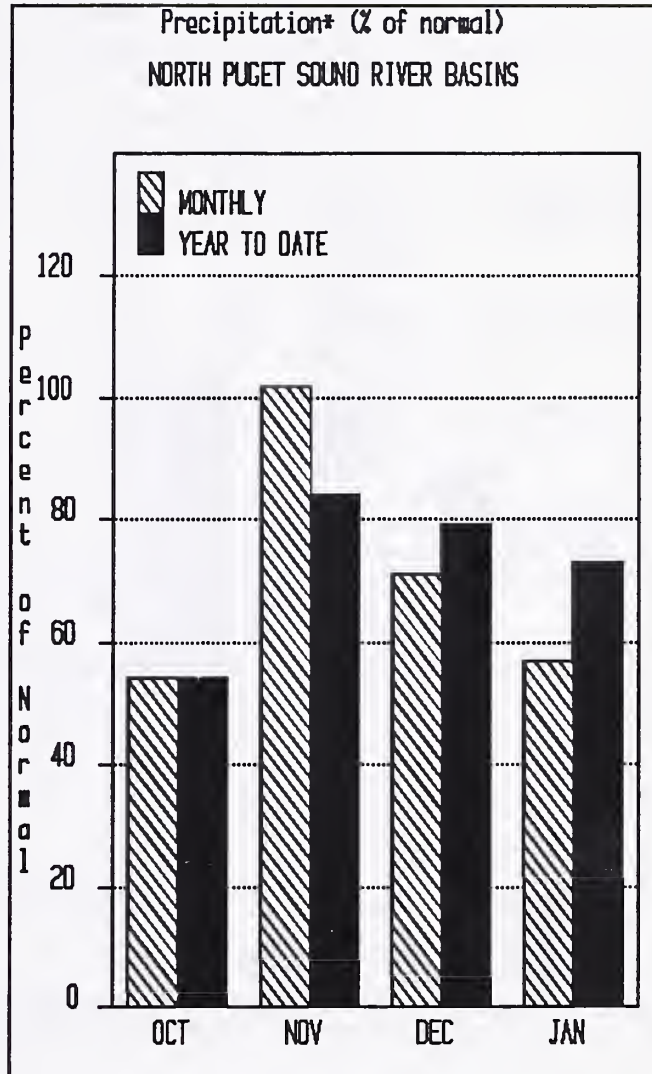
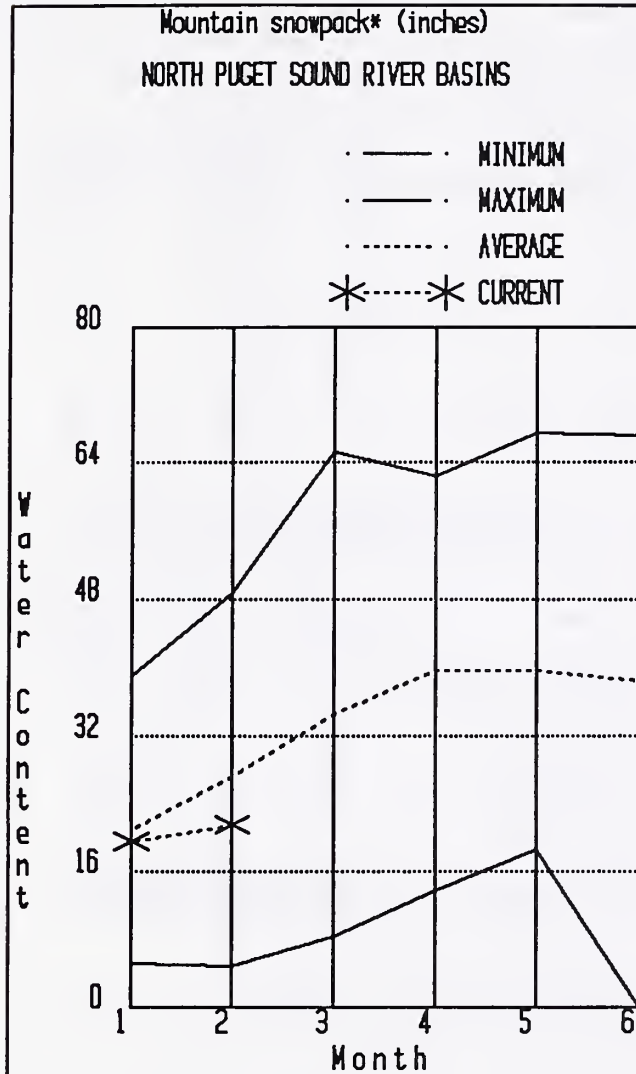
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The average is computed for the 1961-1990 base period.

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(2) - The value is natural flow - actual flow may be affected by upstream water management.

North Puget Sound River Basins



*Based on selected stations

January streamflow in the Skagit River was 49% of average. Forecast for the Skagit River streamflow is 84% of normal for the spring and summer period. New forecast points include the Baker River at 86% and Thunder Creek at 85%. Precipitation for January was 57% of average with a water year to date at 73% of normal. February 1 snow cover in the Skagit River was 81% of normal, and on the Baker River it was 86%. Rainy Pass SNOTEL at elevation 4780 feet, had 20.9 inches of water content; normal February 1 water content is 24.5 inches. February 1 reservoir storage was below average, with Ross Lake reservoir at 72% of normal and 54% of capacity. January temperatures were two degrees below normal.

For more information contact your local Soil Conservation Service office.

NORTH PUGET SOUND RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						
		Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	APR-JUL	168	185	196	85	205	225	230
	APR-SEP	250	270	280	85	290	310	328
	APR-JUN	99	116	127	85	138	155	149
SKAGIT RIVER at Newhalem (2)	APR-SEP	1350	1640	1840	84	2040	2330	2185
	APR-JUL	1130	1370	1540	84	1710	1950	1830
	APR-JUN	875	1060	1190	84	1320	1500	1410
BAKER RIVER near Concrete	APR-JUL	595	670	720	86	770	845	836
	APR-SEP	755	850	910	85	970	1060	1064
	APR-JUN	420	480	525	85	570	630	611

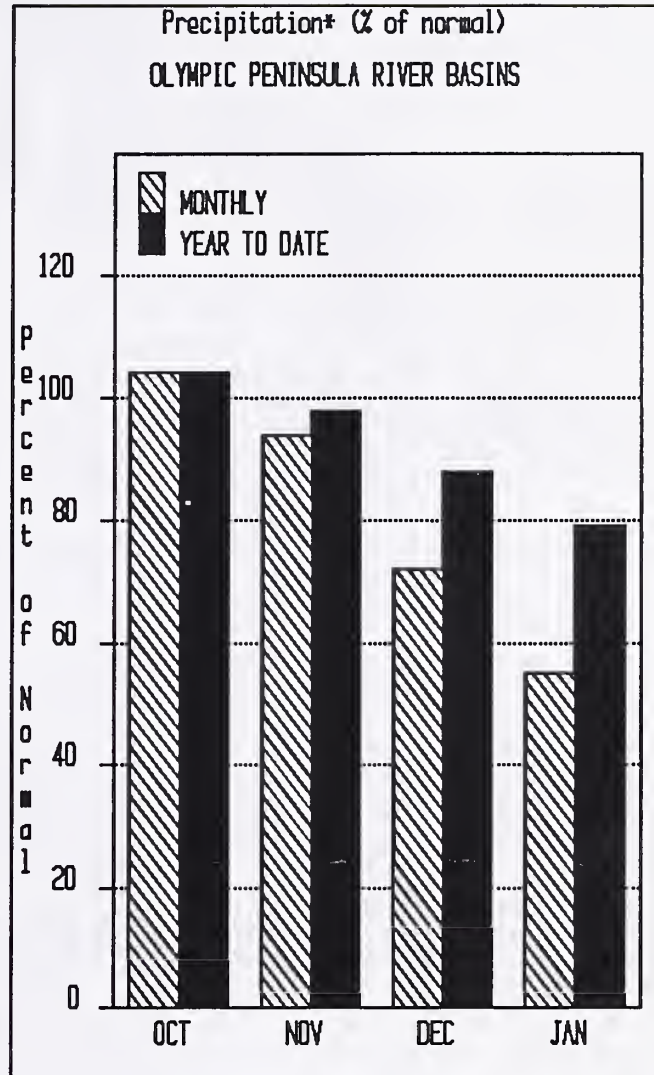
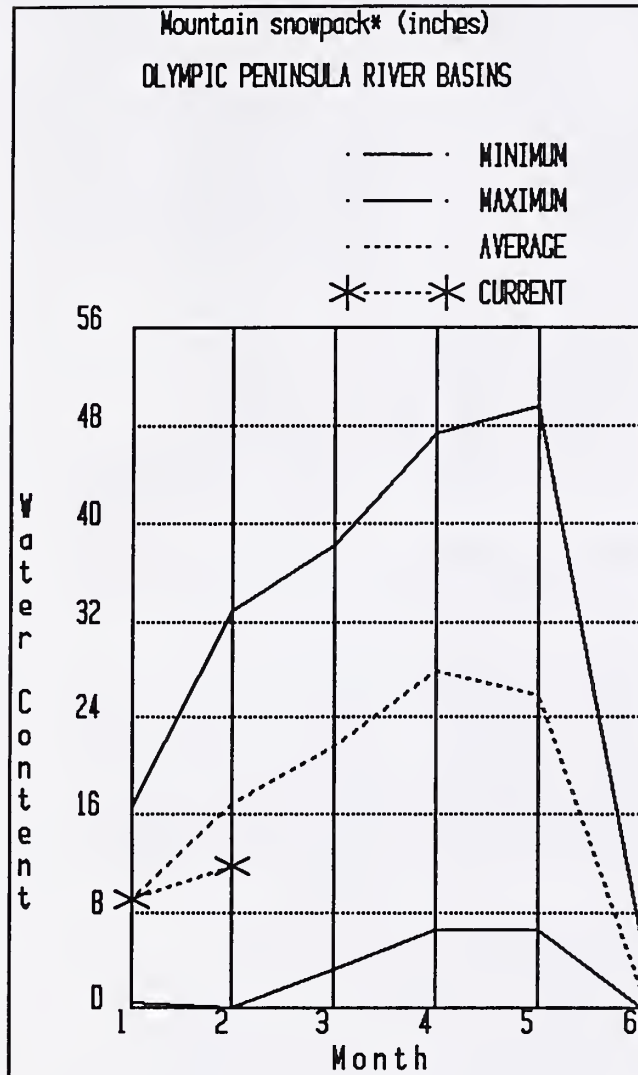
NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of January					NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	744.4	1017.0	1033.9	Snoqualmie River	4	248	101
DIABLO RESERVOIR	90.6	86.8	87.8	84.2	Skykomish River	3	102	96
GORGE RESERVOIR	9.8	8.0	7.8	7.9	Skagit River	11	79	81
					Baker River	8	130	85

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

Olympic Peninsula River Basins



*Based on selected stations

February forecasts of runoff for streamflow in the basin are for 86% of average on the Dungeness River and the Elwha River, 89%. The Big Quilcene can expect below normal runoff this summer. January precipitation was 55% of average, with water year-to-date precipitation accumulation at 79% of normal. January precipitation at Quillayute was 7.88 inches. February 1 snow cover in the Olympic Basin is below normal, with the Elwah at 66% of average and the Dungeness at 67%. The Mount Crag SNOTEL near Quilcene had 18.4 inches on February 1, last year it had 11.3 inches. Temperatures were three degrees below normal for January.

For more information contact your local Soil Conservation Service office.

OLYMPIC PENINSULA RIVER BASINS

Streamflow Forecasts - February 1, 1993

Forecast Point	Forecast Period	<<----- Drier ----- Future Conditions ----- Wetter ----->>						
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
DUNGENESS RIVER nr Sequim	APR-SEP	107	126	139	86	152	171	160
	APR-JUL	88	104	114	87	124	140	131
	APR-JUN	66	77	85	86	93	104	98
ELWHA RIVER nr Port Angeles	APR-SEP	330	395	440	87	485	550	502
	APR-JUL	280	335	370	88	405	460	417

OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of January					OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - February 1, 1993			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Elwha River	1	180	66
					Morse Creek	1	96	75
					Dungeness River	1	100	67
					Quilcene River	0	0	0
					Wynoochee River	0	0	0

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural flow - actual flow may be affected by upstream water management.

In addition to basin outlook reports, a Water Supply Forecast for the Western United States is published by the Soil Conservation Service and National Weather Service monthly, January through May. Reports may be obtained from the Soil Conservation Service, West National Technical Center, 511 Northwest Broadway, Room 248, Portland, OR 97209-3489.

Issued by

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The Following Organizations Cooperate With The Soil Conservation Service In Snow Survey Work

Canada:	Ministry of the Environment, Water Investigations Branch, Victoria, British Columbia
States:	Washington State Department of Ecology Washington State Department of Natural Resources
Federal:	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of the Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
Local:	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakima Indian Nation
Private:	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.



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Washington Basin Outlook Report

Soil Conservation Service
Spokane, WA



